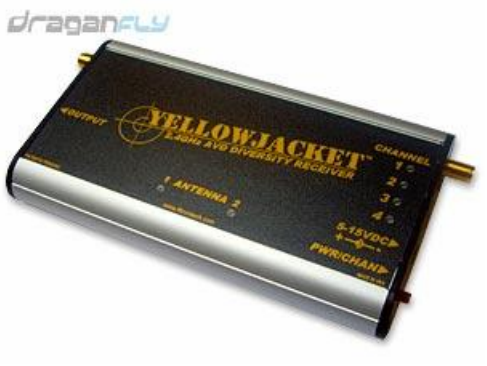
2.4GHz Diversity Wireless Video Receiver

SKU: DF-DIV

Thank you for purchasing the 2.4 GHz Diversity Video Receiver. Utilizing high speed microcontroller technology, our new diversity receiver can dramatically increase the clarity and quality of video obtained with your wireless video camera system. This works by using two receivers and antennas to pickup the video signal. An internal microprocessor automatically switches between the two receivers to the one that is receiving the strongest signal. This instant switching helps to eliminate signal loss and static interference.

Familiarization

Top Panel



The top panel of this receiver will provide you with information regarding its operation while in use. This information will include what antenna, receiver and channel are currently being used.

Active Antenna Indicators:

There are two LED lights on this front panel with the label "1 ANTENNA 2", these indicate which antenna is currently being used to pickup the signal. The left and right position of the two lights corresponds to the selected antenna, so when indicator 1 is illuminated, the receiver is using and displaying the video and audio signal from the left most antenna (as viewed from the TOP of the unit). You will probably notice these two lights will frequently switching back and forth as your video transmitter moves.

Channel Selection:

On the right side of the top panel you will notice 4 LED light labeled. "Channel 1 2 3 4", these lights will indicate which channel on the 2.4GHz bandwidth the receiver is picking up. To scroll through these channels repeatedly press the RED button on the right side of the receiver that is labeled "PWR/CHAN".

Right Panel

Power Jack

The receiver is powered by a regulated 12V DC power supply that must be capable of providing up to 1 Amp of output current. A suitable power supply is available from Draganfly Innovations. The power jack dimensions are 2.1mm x 5.5mm, center positive.

Power Switch/Channel Selection:

To turn the receiver on plug in your power supply then press the RED button on the right side panel

labeled “PWR/CHAN”. This red power button turns the unit on & allows for channel selection. To turn the receiver off the power supply must be unplugged as there is not a power off switch.

Power Indicator:

Antenna indicator lights and Channel selection LED lights will illuminate to indicate the unit is receiving power. The receiver will also emit an audible tone when turned on.

Right Antenna Jack:

The diversity receiver accepts any antenna with a standard SMA connector. Please note that this is different from a ‘reverse SMA’ connector commonly found on wireless network products. The diversity receiver can NOT use antennas terminating at a reverse SMA connector. Most of the larger antenna vendors are able to terminate their antennas at an SMA connector upon request. We recommend the Circular Patch Antenna available from Draganfly Innovations.

Left Side Panel

Left Antenna Jack:

The diversity receiver accepts any antenna with a standard SMA connector. Please note that this is different from a ‘reverse SMA’ connector commonly found on wireless network products. The diversity receiver can NOT use antennas terminating at a reverse SMA connector. Most of the larger antenna vendors are able to terminate their antennas at an SMA connector upon request. We recommend the Circular Patch Antenna available from Draganfly Innovations.

Video and Audio Output:

The video and audio signals from the unit are presented at this jack. They are labeled “Output”. The outputs are standard composite and line level signals. They can be plugged into a television, VCR, camcorder, or any other device capable of accepting a composite video and line level audio signal. This output accepts a 1/8" (3.5mm) AV jack.

Handling Precautions

While the unit is sturdily designed, it is still a sensitive electronic device. Do not subject the unit to excessive heat, shock or moisture. Never leave the unit in a hot vehicle where the temperatures could exceed 140 degrees Fahrenheit, or operate the unit without proper ventilation.

Using the Diversity Receiver

General Setup Procedures:

Using the diversity receiver is fairly straight forward, once you’ve learned these steps:

1) Plug a video monitor (or TV, VCR, Camcorder etc) into the video and audio output of the diversity receiver.
2) Make sure all connections are tight, especially the antennas. Finger tighten them firmly.

3) Apply power to the diversity receiver. If using a battery, observe proper polarity. Observe the Active Antenna indicators on the front of the unit, and listen for the two startup tones. The unit will complete a quick start up and self test sequence, after which one of the receiver lights will be on and the other one off (it doesn't matter which is which at this point)
4) Examine the channel selection on the top of the unit. It should correspond to the channel setting of your video transmitter.
5) If you have not already done so, apply power to your video transmitter. Make sure it is operating on the same channel as the diversity receiver. If you have a video source attached to your transmitter, you should be presented with a video image on your monitor. If you have NO video source attached to the transmitter, you will see a black image. If you see "snow" you are not receiving a signal from your transmitter. Check your transmitter, channel matching, and all connections.
6) Move the transmitter around in front of the diversity receiver. You should be able to find various positions of the transmitter that cause the Active Antenna Indicator lights to switch back and forth. This tells you the diversity receiver is doing its job.
7) It is hard to predict every installation so we'll make the following general installation comments: Proper selection and setup of both the transmitter and receiver antennas will insure best results. It is important to try different installations until you get the best possible results. When we fly our systems, it usually takes 2 or 3 'tweaks' of the installation to optimize our results. Don't get discouraged. Great video is possible with a little effort!

Your Diversity Receiver has been preset to correspond with your Draganflyer SAVS helicopter. It is not necessary to reprogram your receiver, however if you decide to change the programming the following directions should guide you through the process.

User Programmable Features:
The YellowJacket receiver has 3 programmable features that can be configured at will. All features are accessed by the single pushbutton control located on the right side of the unit. All programming choices made during programming are automatically stored when power is removed and therefore will not need to be re-entered upon power up.

These features are:
1. Channel Group Selection
2. Channel Selection
3. Stealth Mode (system beeper mute)

Selecting a Channel:
First a word about channel organization, the YellowJacket receiver comes with 4 groups of channels stored in permanent memory, making a total of 16 possible channels selections. The reason for this organization is that most available transmitters broadcast on a group of 4 frequencies so the YellowJacket channel organization makes for convenient tuning in the field.

Because many different manufacturers produce transmitters on very closely-spaced frequencies, tuning the YellowJacket by the "hunt and peck" method is discouraged. By this we mean: tuning the receiver until you find your transmitter is a bad idea. The reason is that your transmitter and receiver frequencies could be different, but close enough for good reception at close range—but not at a distance! To ensure clear video you will have to **know** your transmitting frequency and to tune the receiver to it by using this chart.

Selecting a Channel Group:

	Group 1	Group 2	Group 3	Group 4
Displayed Channel	**MHz**	**MHz**	**MHz**	**MHz**
1	**2.414**	**2.410**	**2.370**	**2.413**
2	**2.432**	**2.430**	**2.390**	**2.432**
3	**2.450**	**2.450**	**2.490**	**2.451**
4	**2.468**	**2.470**	**2.510**	**2.470**

To program the YellowJacket to receive a channel group do the following:

1. Identify the channel group that you will be transmitting/receiving on from the chart above.

2. Turn on the unit by momentarily pressing the button.
Observe that antenna channel LED's will light.

3. Press and hold the button (~ 3 sec.) until the unit enters the channel group programming mode.
Note: the receiver will seem to turn off then turn back on in this special mode.
Channel lights will flash quickly in a special pattern.

4. Release button.
The channel Led representing the present channel group will flash and a chirp may be heard.

5. Quick pushes of the button will move the channel LED and corresponding group to the next selection.

6. Continue until the LED corresponding to the correct group is on.
7. Press and hold the pushbutton until your selection is accepted into memory (~3 sec.).
Double flashes and beeps will acknowledge your choice.

8. Release the button to restart the receiver with the new channel group.
The new group will be remembered and loaded automatically upon all future start-ups until changed.

Stealth Mode (system beeper mute):

1. Power off the receiver by holding the button for 3 seconds.

2. From the powered off position, press and hold the button for 3 seconds.

3. The receiver will turn on and then all channel LED's will illuminate.

4. Momentarily push the red button to select desired mode.
Dim LED's and no beeps indicate Stealth Mode. Bright LED's and beeps indicate normal mode.

5. Press and hold the button for 3 seconds.
The YellowJacket will acknowledge selection with double flashes and store to memory.

6. Release button to restart in chosen mode.

All programming features except channel selection* share the following behavior:

- Press and hold 3 seconds to enter a menu
- Quick button pushes advance to the next selection within a menu
- Press and hold the button for 3 seconds to lock in the choice and exit a menu.
- YellowJacket will double-flash the channel lights to accept and store your choice
- Release the button to complete the operation

*Channel selection advances and stores your selection automatically with each quick push of the button when in normal operation.